

## PATENT ABSTRACTS OF JAPAN

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(71)Applicant : HONDA MOTOR CO LTD

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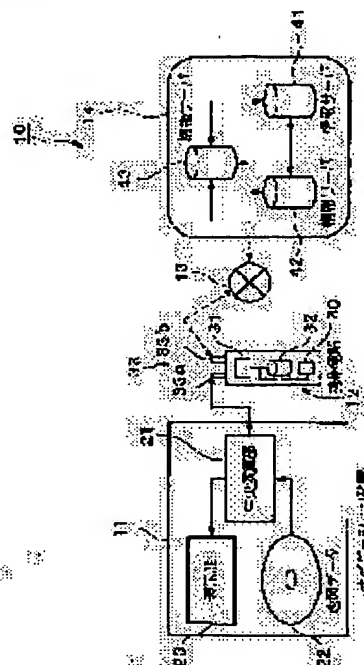
(72)Inventor : YABU TOSHIHIDE  
MURATA SATOSHI

## (54) PORTABLE TERMINAL AND NAVIGATION SYSTEM PROVIDED THEREWITH

## (57)Abstract:

PROBLEM TO BE SOLVED: To improve the operability and the convenient usefulness.

SOLUTION: The navigation system 11 is communicably connected through a portable telephone 12 to a server apparatus 14, and has a central processor 21 which receives point information including position information outputted from the portable telephone 12 to display each point information, a list of a plurality of points information, etc., on a display 23 or utilize the information for setting a destination or route guidance, etc. A processor 30 of the portable telephone 12 retrieves point information including e.g. position information stored in the server apparatus 14 to display retrieval results for a specified position on a display 31 of the portable telephone 12 and store the retrieval result in a memory 32. A plurality of points information stored in the memory 32 are e.g. collected into one set presentable as a list, and the individual point information or the plurality of points information are transmitted via a communication unit 33 of the portable telephone 12 to the navigation system 11.



## LEGAL STATUS

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**CLAIMS**

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**[Claim(s)]**

**[Claim 1]** The personal digital assistant characterized by having a point information retrieval means to retrieve the point information on a predetermined location, and a point information preservation means to save said point information retrieved by said point information retrieval means.

**[Claim 2]** Said point information preservation means is a personal digital assistant according to claim 1 characterized by supposing that it is removable to said personal digital assistant.

**[Claim 3]** It is the navigation system characterized by being the navigation system equipped with said personal digital assistant given in any of claim 1 or claim 2 they are, and equipping said personal digital assistant with a transmitting means to transmit said point information saved by said point information preservation means to navigation equipment.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

#### [0001]

[Field of the Invention] This invention relates to the technique of saving the point information on the predetermined location which was applied to the navigation system equipped with the personal digital assistant and this personal digital assistant, for example, was searched with the personal digital assistant.

#### [0002]

[Description of the Prior Art] When receiving retrieval data including positional information in the navigation equipment for cars conventionally from the server equipment for information retrieval formed on the Internet and a proper exclusive network, the approach of connecting with server equipment through a public network with the portable telephone connected to navigation equipment removable, for example, using communications protocols, such as Internet Protocol, is learned.

#### [0003]

[Problem(s) to be Solved by the Invention] However, only in order to perform data communication chiefly, also when it is necessary to connect a portable telephone etc. to a public network for example, and performs two or more kinds of search with navigation equipment with an example of the above-mentioned conventional technique, there is a problem that where of convenience is bad, without the ability being able to transmit collectively two or more retrieval data which needed to transmit to navigation equipment for each [ which was obtained by retrieval ] retrieval data of every, for example, were obtained by a series of retrieval. and when it refers to a simple substance by connecting with server equipment using a portable telephone etc., without connecting with navigation equipment etc., for example The retrieval data displayed on display screens, such as a portable telephone, cannot be transmitted to navigation equipment. For example, there is a problem of taking the complicated time and effort that a user reads positional information, such as the telephone number and the address, in the text displayed on the display screen, and reinputs into navigation equipment. This invention was made in view of the above-mentioned situation, and aims at offering the navigation system equipped with the personal digital assistant which can raise operability and convenience, and this personal digital assistant.

#### [0004]

[Means for Solving the Problem] In order to attain the purpose which solves the above-mentioned technical problem and starts, the personal digital assistant (for example, portable telephone 12 in the gestalt of operation mentioned later) of this invention according to claim 1 A point information retrieval means to retrieve the point information on a predetermined location (for example, processing section 30 in the gestalt of operation mentioned later), It is characterized by having a point information preservation means (for example, storage section 32 in the gestalt of operation mentioned later) to save said point information retrieved by said point information retrieval means.

According to the personal digital assistant of the above-mentioned configuration, while connecting to proper server equipment the personal digital assistant which forms a portable telephone, for example, retrieving the point information which consists of positional information, store information, etc. on a predetermined location, for example, a predetermined store etc., and displaying this retrieval result on the display screen of a portable telephone, a retrieval result is saved with a point information storage means. Thereby, the retrieval result of point information can be again referred to without the need of connecting with server equipment. Here, the compatibility between each equipment can be raised by making file format at the time of saving a retrieval result into the formats (for example, extended method which added point information based on the "vCARD" method) which can be read with other general-purpose equipments, for example, navigation equipment, PDA (Personal Digital Assistant), a computer apparatus, etc. for cars.

[0005] Furthermore, in the personal digital assistant of this invention according to claim 2, said point information preservation means is characterized by supposing that it is removable to said personal digital assistant. According to the personal digital assistant of the above-mentioned configuration, only a point information preservation means by which point information was stored can be removed from a personal digital assistant, for example, navigation equipment, a computer apparatus, etc. for cars can be equipped, and point information can be easily transmitted to two or more equipments.

[0006] Furthermore, the navigation system of this invention according to claim 3 The navigation system equipped with said personal digital assistant given in any of claim 1 or claim 2 they are It is (for example, the navigation system 10 in the gestalt of operation mentioned later). Said personal digital assistant It is characterized by having a transmitting means (for example, communications department 33 in the gestalt of operation mentioned later) to

transmit said point information saved by said point information preservation means to navigation equipment (for example, navigation equipment 11 in the gestalt of operation mentioned later). According to the navigation system of the above-mentioned configuration, the point information stored by point information storage means of a personal digital assistant to make a portable telephone, for example can be transmitted, for example using short-distance radio, such as infrared ray communication, such as a proper signal line and IrDA, and Bluetooth, etc. In this case, navigation equipment can perform a course guidance etc. using the retrieved point information by transmitting the point information retrieved using the personal digital assistant to navigation equipment, without always maintaining a personal digital assistant and navigation equipment in the connection condition.

[0007]

[Embodiment of the Invention] It explains referring to an accompanying drawing about the navigation system hereafter equipped with the personal digital assistant concerning 1 operation gestalt of this invention. Drawing 1 is the block diagram of the navigation system 10 equipped with the personal digital assistant concerning 1 operation gestalt of this invention, drawing 2 (a) - (c) is drawing showing the display screen of the portable telephone 12 shown in drawing 1, and drawing 3 is drawing showing the display screen of the navigation equipment 11 shown in drawing 1. The navigation system 10 equipped with the personal digital assistant by the gestalt of this operation is equipped with the navigation equipment 11 for cars, the personal digital assistant which forms a portable telephone 12, and the server equipment 14 connected with the portable telephone 12 through the public network 13 grade, and is constituted.

[0008] Navigation equipment 11 is connected with server equipment 14 possible [ a communication link ] through the portable telephone 12 which a user owns. This navigation equipment 11 For example, positioning signals, such as a GPS (Global Position System) signal for measuring the location of a car using a satellite, For example, road traffic information, such as VICS (Vehicle Information & Communication System) information, For example, the central operation part 21 which computes the current position of a car based on processing in the autonomous navigation section which consists of a proper gyroscope sensor and a proper accelerometer, For example, it has the map data storage section 22 which stored the map data stored in the record medium which can computer read CD-ROM, DVD-ROM, etc., and a display 23, and is constituted. And the central operation part 21 displays additional information, such as path information to the current position and the destination of a car, and delay information, regulation information, etc. on a display 23 while performing map matching etc. based on the information on the current position of a car to the map data stored in the map data storage section 22. Moreover, the central operation part 21 receives point information including the positional information outputted from the portable telephone 12 so that it may mention later, and the list of every place point information or two or more point information etc. is displayed on a display 23, or it uses it for a setup, a course guidance, etc. of the destination.

[0009] The portable telephone 12 is connected with server equipment 14 through the public network 13, and it memorizes a retrieval result in the storage section 32 while the processing section 30 of a portable telephone 12 retrieves the point information which was stored in server equipment 14 and which includes positional information, for example so that it may mention later, and it displays the retrieval result of a predetermined location on the display 31 of a portable telephone 12. This retrieval result is saved in the storage section 32 as a text file, and let the format of this text file be the extended method with which positional information was added by PDA (Personal Digital Assistant) etc. for example, corresponding to the "vCard" specification currently used as an address book. Furthermore, two or more point information memorized by the storage section 32 is summarized to one, the list display is enabled, and each point information or two or more point information are transmitted to navigation equipment 11 through the communications department 33 of a portable telephone 12. Here, the communications department 33 has server equipment 14 and server equipment communications department 33b which performs a communication link through navigation equipment 11, navigation equipment communications department 33a which performs a communication link, and a public network 13, and is constituted. In addition, especially the method of transmitting each information to navigation equipment 11 through navigation equipment communications department 33a of a portable telephone 12 may not be limited, for example, may be radio, such as infrared ray communication, such as IrDA, and Bluetooth, etc.

[0010] Server equipment 14 is formed for example, on the Internet and the network of dedication, and is connected with the portable telephone 12 by server equipment communications department 33b through the public network 13. Server equipment 14 is equipped with plurality 41, 42, and 43, for example, three information servers, and is constituted, store information is stored in the information server 41, map information is stored in the information server 42, and the point information with which it comes to unify store information and map information is stored in the information server 43. Here, store information consists of detailed information, such as the address of for example, various stores, the telephone number, URL, handling goods, and the contents of the service to offer, and map information consists of map data specified by positional information, such as LAT and LONG, and the address. And the server equipment 14 connected with a user's portable telephone 12 searches each information servers 41, 42, and 43 based on various kinds of command signals inputted from a portable telephone 12, and outputs the retrieval result of point information including positional information etc. to a portable telephone 12.

[0011] The navigation system 10 by the gestalt of this operation is explained having the above-mentioned configuration, next referring to an accompanying drawing about actuation of this navigation system 10.

[0012] First, a user connects a portable telephone 12 and server equipment 14 through a public network 13. And a predetermined command signal is transmitted from a portable telephone 12, and each information servers 41, 42, and 43 of server equipment 14 are searched. A retrieval result is displayed on the display 31 of a portable telephone

12 as point information including positional information and store information, as shown in drawing 2 (a). Furthermore, on this display screen, as shown in drawing 2 (b), each processing is performed because "preservation" directions section 51 which directs to store point information on display in the storage section 32 of a portable telephone 12, and the "next candidate" directions section 52 which directs to display other point information are formed, for example, a user pushes each directions sections 51 and 52 with a finger etc. [0013] Furthermore, the every place point information stored in the storage section 32 of a portable telephone 12 A list display is enabled as shown in drawing 2 (c). For example, on this list display screen Every place point information is transmitted because the "transfer" directions section 53 which directs to transmit all the point all [ a part or ] stored in the storage section 32 to other equipments of navigation equipment 11 grade is formed, for example, a user pushes the "transfer" directions section 53 with a finger etc. And as shown, for example in drawing 3 , the point information transmitted to navigation equipment 11 is displayed possible [ a list display ] by the display 23 of navigation equipment 11, and is perused by the user, while it is used for a setup, a course guidance, etc. of the destination.

[0014] As mentioned above, according to the navigation equipment 10 by the gestalt of this operation, a retrieval result can be again repeated and referred to, without connecting a portable telephone 12 to navigation equipment 10 because point information including the positional information and store information which were retrieved with the portable telephone 12 is storable in the storage section 32 in addition to displaying on the display 31 of a portable telephone 12. Furthermore, navigation equipment 11 can perform a setup, a course guidance, etc. of the destination without the need of always maintaining navigation equipment 11 and a portable telephone 12 in the connection condition by transmitting the retrieval result in a portable telephone 12 to navigation equipment 11, using a retrieval result.

[0015] In addition, when transmitting each information to navigation equipment 11 from a portable telephone 12, in this operation gestalt although it transmits by radio through the communications department 33 of a portable telephone 12 It is not limited to this, for example, a portable telephone 12 is connected removable to navigation equipment 11. May transmit each information stored in the storage section 32 of a portable telephone 12 to navigation equipment 11, and For example, navigation equipment 11 may be equipped with these storage sections 32 and record media as removable [ to a portable telephone 12 ] in the proper record medium with which the information stored in the storage section 32 or the storage section 32 of a portable telephone 12 was transmitted.

[0016]

[Effect of the Invention] As explained above, according to the personal digital assistant of this invention according to claim 1, the retrieval result of point information can be again referred to without the need of connecting with server equipment etc., and the convenience of a personal digital assistant can be raised. Furthermore, according to the personal digital assistant of this invention according to claim 2, the saved retrieval result can be easily used with various kinds of equipments. Moreover, according to the navigation system of this invention according to claim 3, the point information retrieved with the personal digital assistant can be repeated and used for a setup, a course guidance, etc. of the destination in navigation equipment, and the operability and convenience of a navigation system can be raised without the need of always connecting navigation equipment and a personal digital assistant.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the block diagram of the navigation system equipped with the personal digital assistant concerning 1 operation gestalt of this invention.

[Drawing 2] Drawing 2 (a) - (c) is drawing showing the display screen of the portable telephone shown in drawing 1 .

[Drawing 3] It is drawing showing the display screen of the navigation equipment shown in drawing 1 .

[Description of Notations]

10 Navigation System

11 Navigation Equipment

12 Portable Telephone (Personal Digital Assistant)

30 Processing Section (Point Information Retrieval Means)

32 Storage Section (Point Information Preservation Means)

33 Communications Department (Transmitting Means)

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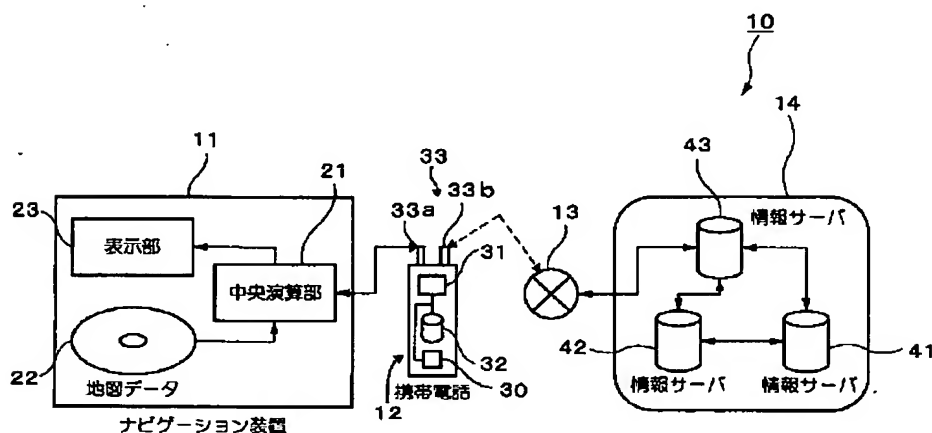
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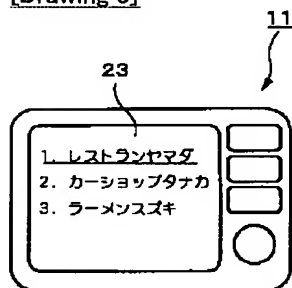
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## DRAWINGS

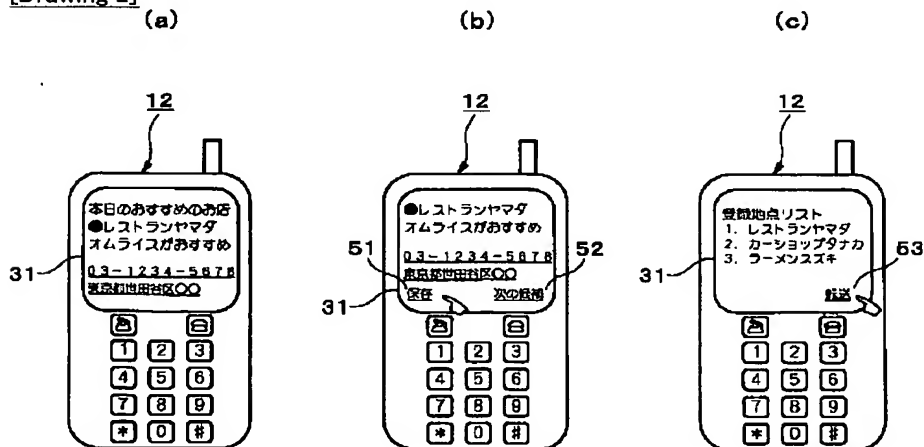
[Drawing 1]



[Drawing 3]



[Drawing 2]



[Translation done.]